Ron Wigal

United States Department of Agriculture | Forest Service | George Washington & Jefferson National Forests | 5162 Valleypointe Parkway Roanoke, VA 24019-3050 540/265-5100

File Code: 1950-1/3530-1
Date: August 16, 2005

Mr. Ronald L. Hilliard
State Conservationist
Natural Resources Conservation Service
75 High Street, Room 301
Morgantown, WV 26505

Dear Mr. Hillliard:

Your July 5, 2005 letter requested that the Forest Service be a cooperating agency in accordance with 40 CFR 1501.5. We accept your invitation and shall become a cooperating agency for the analysis of your project known as Lost River Site 16. I have the responsibility to determine whether to authorize either your agency or the local sponsoring organization to inundate approximately 11 acres National Forest System (NFS) land, of which about one acre would be for the permanent pool and 10 acres would be for the flood water retention pool.

The local sponsoring organization should apply to this office for the authorization. If approved, a special use permit would be issued.

We have searched our records and discussed this project with Forest Service personnel familiar with the area in question. Archaeological resources are not known to exist in the project area. Likewise, Federally-listed terrestrial or aquatic threatened or endangered plant or animal species are not known to exist in the project area.

The Forest Service Southern Region also maintains a list of sensitive species. Sensitive species are those species for which population viability is a concern. No Forest Service sensitive aquatic or terrestrial plant or animal species are known to exist in the project area.

Attached are inventory records showing the results of stream surveys for Cove Run along with two pages of interpretative information. A Macroinvertebrate Aggregated Index for Streams (MAIS) (range of scores 0-18) incorporates nine ecological aspects (metrics) of the aquatic macroinvertebrate community to evaluate the current condition of a stream relative to others within that ecological section. On the attached sheets the MAIS scores for Lower Cove Run and Cove Run are 18 and 17 respectively, which places them in the "very good" category for streams in the same ecological section.

Finally, a mailing list is attached with the names of people or organizations known to be interested in similar projects on the Lee Ranger District. This list will also be sent electronically to Mr. Ron Wigal of your staff.

Please let us know when we can be of further assistance on this project.

Sincerely,

Ted Coffman

FOR MAUREEN T. HYZER
Forest Supervisor

cc: Lee Ranger District

Enclosures

RBP Metric Interpretation

Community Structure Metrics:

EPT Index - generally increases with increasing water quality. The EPT Index is the total number of distinct taxa within the orders Ephemeroptera, Plecoptera, and Trichoptera. This value summarizes taxa richness within the insect orders that are generally considered to be pollution sensitive. EPT index decreases in response to increasing peturbation. Scores have ranged from 0 to 18, median is 12. Less than or equal to 2 is poor (0), between 2 and 7 is fair (1), and greater or equal to 8 is good (2).

Number Ephemeroptera - the total number of distinct taxa within the order Ephemeroptera. Mayflies are generally considered to be pollution-sensitive. Therefore, the number of mayfly taxa decrease in response to increasing peturbation. Equal to 0 is poor (0), between 1 and 3 is fair (1), and 4 or greater is good (2).

Community Composition Metric:

Percent Ephemeroptera - percent abundance of mayflies. Mayfies are particularly sensitive to a wide variety of impairments. This order is often missing in polluted streams. Scores generally range from 0 to 81%, with median at 26%. Equal to 0 is poor (0), between 1 and 18 is fair (1), and greater than 18 is good (2).

Community Balance Metrics:

Percent 5 most dominant taxa - The percent contribution of the five most numerically dominant taxa to the total number of organisms is an indication of community balance. A community dominated by a relatively few species would indicate environmental stress. This index generally increases in response to increasing peturbation. Scores generally range between 50 and 100, with median at 73%. Greater than or equal to 95 is poor (0), between 80 and 95 is fair (1), and less than 80 is good (2).

Simpson's Diversity Index - Incorporates both richness and evenness in a measure of general diversity and composition. Diversity generally declines as impacts increase. therefore, Simpon's index of diversity decreases in response to increasing peturbation. Scores generally range from .2 to .9, with median at .8. Less than or equal to .65 is poor (0), between .65 and .85 is fair (1), and greater than .85 is good (2).

Tolerance Metrics:

Intolerant index - number of macroinvertebrate taxa with tolerance values of 5 or less. Tolerance values taken from Family Biotic Index. Assumes that a greater percent abundance of intolerant macroinvertebrates indicates an unperturbed condition. Scores generally range from 1 to 25 with median at 14. Less than or equal to 4 is poor (0), between 4 and 10 is fair (1), and greater than 10 is good (2).

Family Biotic Index - Tolerance values range from 0 to 10, increasing as water quality decreases. This metric measures the proportion of sensitive to tolerant organisms in the community. The greater the propotion of sensitive organisms the lower the index value. The greater the proportion of tolerant organisms, the greater the index value. This index generally increases in response to increase peturbation. Scores generally range from 1 to 6, with median at 3.5. Greater than or equal to 5.75 is poor (0), between 4.22 and 5.75 is fair (1), and less than 4.22 is good (2).

Trophic Metric:

Percent Scrapers - The relative abundance of scrapers in the riffle habitat provides an indication of the periphyton community composition. Scrapers increase with increased abundance of diatoms and decrease as filamentous algae and aquatic mosses (which cannot be efficiently harvested by scrapers) increase. Percent scrapers generally decrease in response to increasing peturbation. Scores have ranged from 0 to 78, with median at 14. Less than or equal to 5 is poor (0), between 5 and 10 is fair (1) and greater than 10 is good (2).

Habit Metric:

Percent haptobenthos - Percent abundance of taxa requiring clean coarse substrate. Silty or scummy rocks are primarily inhabited by pollution-tolerant macroinvertebrates. Percent haptobenthos decrease in response to increasing peturbation. Scores have ranged from 22 to 100%, with median at 86%. Less than 55 is poor (1), between 55 and 85 is fair (1), and greater than 85 is good (2).

Macroinvertebrate Aggregated Index for Streams (MAIS) - incorporates the above 9 metrics to evaluate the current condition of a stream relative to others within the ecological unit. It ranges from 0 to 18. Less than 6 is very poor, between 7 and 12 is poor/fair, between 13 and 16 is good, and between 17 and 18 is very good.

Rapid Bioassessment Protocol Data Sheet
George Washington and Jefferson National Forests

Site Id 4059 Stream Name **Lower Cove (Upper)** Quad **Lost City**
Elev Ft Utm X **693,967** Utm Y **4,310,203** Sq Km
Lta Eco Region Sub Region Roads Mt
P Str Mt I Str Mt Gradient Sinuousity

Inv Date **16-APR-02** Sub Sampled Collectors
Pick Name Id Name **George Annis**

Ffg	Habit	Score	Taxa Order	Family	Riffle	Cpom
SC	CG	4	COLEOPTERA	ELMIDAE	3	0
PR	BU	6	DIPTERA	CERATOPOGONIDAE	1	0
CG	BU	6	DIPTERA	CHIRONOMIDAE	12	0
SH	CR	3	DIPTERA	TIPULIDAE	8	0
CG	CG	4	EPHEMEROPTERA	BAETIDAE	1	0
CG	CR	4	EPHEMEROPTERA	EPHEMERELLIDAE	7	0
CG	BU	4	EPHEMEROPTERA	EPHEMERIDAE	3	0
SC	CG	4	EPHEMEROPTERA	HEPTAGENIIDAE	19	0
CG	CR	2	EPHEMEROPTERA	LEPTOPHLEBIIDAE	2	0
CG	GN	5	INVERTEBRATES	CAMBARIDAE	1	0
PR	CR	5	MEGALOPTERA	CORYDALIDAE	12	0
PR	CR	1	PLECOPTERA	CHLOROPERLIDAE	4	0
PR	CR	1	PLECOPTERA	PERLIDAE	4	0
PR	CR	2	PLECOPTERA	PERLODIDAE	10	0
SH	CR	0	PLECOPTERA	PTERONARCYIDAE	2	0
CF	CG	6	TRICHOPTERA	HYDROPSYCHIDAE	8	0
CF	CG	3	TRICHOPTERA	PHILOPOTAMIDAE	1	0
PR	CR	0	TRICHOPTERA	RHYACOPHILIDAE	10	0

Site Id 4059 Stream Name **Lower Cove (Upper)** Quad **Lost City**

Elev Ft Utm X **693,967** Utm Y **4,310,203** Sq Km

Lta Eco Region Sub Region Roads Mt

P Str Mt I Str Mt Gradient Sinuousity

Inv Date **16-APR-02** Sub Sampled Collectors

Pick Name Id Name **George Annis**

Metrics:

Macroinvertabrate Aggregated Indexfor Streams (MAIS): **18 – Very Go**

	Value	Score
Simpson's Diversity Index -	.907	2
Ept Index -	12	2
% Ephemeroptera -	29.63	2
# Ephemeroptera -	5	2
Intolerant Index -	15	2
% Haptobenthos -	84.26	2
Family Biotic Index -	3.54	2
% Scrapers -	20.00	2
% 5 Most Dominant Taxa -	58.33	2

Family Dominance:

PCT	Dominant Family Name
17.59	- EPHEMEROPTERA HEPTAGENIIDAE
11.11	- MEGALOPTERA CORYDALIDAE
11.11	- DIPTERA CHIRONOMIDAE
9.26	- PLECOPTERA PERLODIDAE
9.26	- TRICHOPTERA RHYACOPHILIDAE

Mean Water Quality Data:

Ph	Anc	Ca++	Mg++	Na++	K+	Cl-	No3	So4=	Alt	Alm
7.19	175.4	147.5	113.9	77.8	23	22	11.1	113.1	32	

* Based on 1 samples taken between **23-APR-02** and **23-APR-02**

Rapid Bioassessment Protocol Data Sheet
George Washington and Jefferson National Forests

Site Id 4060 Stream Name Cove Run Quad Lost City

Elev Ft 1607 Utm X 689,441 Utm Y 4,309,888 Sq Km 29

Lta 22 Eco Region 67 Sub Region 67C Roads Mt 16,039

P Str Mt 7,248 I Str Mt 9,502 Gradient 2.73 Sinuousity 1.070

Inv Date 09-MAR-95 Sub Sampled Collectors Mark Hudy

Pick Name George Annis Id Name

Ffg	Habit	Score	Taxa Order	Family	Riffle	Cpom
SC	CG	4	COLEOPTERA	ELMIDAE	15	0
CG	BU	6	DIPTERA	CHIRONOMIDAE	25	0
CF	CG	6	DIPTERA	SIMULIDAE	7	0
SH	CR	3	DIPTERA	TIPULIDAE	20	0
CG	CG	4	EPHEMEROPTERA	BAETIDAE	2	0
CG	SP	3	EPHEMEROPTERA	BAETISCIDAE	1	0
CG	CR	4	EPHEMEROPTERA	EPHEMERELLIDAE	192	0
SC	CG	4	EPHEMEROPTERA	HEPTAGENIIDAE	35	0
CG	CR	2	EPHEMEROPTERA	LEPTOPHLEBIIDAE	54	0
CF	CG	2	EPHEMEROPTERA	OLIGONEURIIDAE	20	0
CG	CR	7	EPHEMEROPTERA	SIPHLONURIDAE	5	0
CG	GN	5	INVERTEBRATES	CAMBARIDAE	14	0
PR	CR	5	MEGALOPTERA	CORYDALIDAE	2	0
SH	CR	1	PLECOPTERA	CAPNIIDAE	1	0
PR	CR	1	PLECOPTERA	CHLOROPERLIDAE	1	0
PR	CR	1	PLECOPTERA	PERLIDAE	17	0
PR	CR	2	PLECOPTERA	PERLODIDAE	12	0
SH	CR	2	PLECOPTERA	TAENIOPTERYGIDAE	3	0
CF	CG	6	TRICHOPTERA	HYDROPSYCHIDAE	17	0
CF	CG	3	TRICHOPTERA	PHILOPOTAMIDAE	5	0
PR	CR	0	TRICHOPTERA	RHYACOPHILIDAE	12	0

Site Id 4060 Stream Name **Cove Run** Quad **Lost City**

Elev Ft **1607** Utm X **689,441** Utm Y **4,309,888** Sq Km **29**

Lta **22** Eco Region **67** Sub Region **67C** Roads Mt **16,039**

P Str Mt **7,248** I Str Mt **9,502** Gradient **2.73** Sinuousity **1.070**

Inv Date **09-MAR-95** Sub Sampled Collectors **Mark Hudy**

Pick Name **George Annis** Id Name

Metrics:

Macroinvertabrate Aggregated Indexfor Streams (MAIS): **17 - Very Go**

	Value	Score
Simpson's Diversity Index -	.793	1
Ept Index -	15	2
% Ephemeroptera -	67.17	2
# Ephemeroptera -	7	2
Intolerant Index -	17	2
% Haptobenthos -	91.30	2
Family Biotic Index -	3.61	2
% Scrapers -	11.00	2
% 5 Most Dominant Taxa -	70.87	2

Family Dominance:

PCT	Dominant Family Name
41.74	- EPHEMEROPTERA EPHEMERELLIDAE
11.74	- EPHEMEROPTERA LEPTOPHLEBIIDAE
7.61	- EPHEMEROPTERA HEPTAGENIIDAE
5.43	- DIPTERA CHIRONOMIDAE
4.35	- EPHEMEROPTERA OLIGONEURIIDAE

Mean Water Quality Data:

Ph	Anc	Ca++	Mg++	Na++	K+	Cl-	No3	So4=	Alt	Alm
7.64	593.43	548.75	133.13	86	24	38	37.13	222.3	18	

* Based on 4 samples taken between 08-FEB-90 and 11-DEC-95

Site Id 4059 Stream Name **Lower Cove (Upper)** Quad **Lost City**

Eco Region Sub Region Lta Elev Ft Sq Km

Utm X **693967** Utm Y **4310203** Roads Mt

P Str Mt | I Str Mt Gradient Sinuousity

Inv Date	Ph	Anc	Ca++	Mg++	Na++	K+	Cl-	No3	So4	Alt	Alm	Caratio
23-APR-02	**7.19**	**175.4**	**147.5**	**113.9**	**77.8**	**23.3**	**22.1**	**11.1**	**113.1**	**32**		**2284.505**

Site Id 4060 Stream Name **Cove Run** Quad **Lost City**

Eco Region **67** Sub Region **67C** Lta **22** Elev Ft **1607** Sq Km **29.24**

Utm X **689441** Utm Y **4309888** Roads Mt **16039**

P Str Mt **7248** I Str Mt **9502** Gradient **2.73** Sinuousity **1.07**

Inv Date	Ph	Anc	Ca++	Mg++	Na++	K+	Cl-	No3	So4	Alt	Alm	Caratio
08-FEB-90	7.51	460	509	171	54	20	37	43	214			16470.917
20-FEB-91	8.03	700.8	279	202	67	28	35	47	213			29895.389
25-FEB-92	7.63	593	669	113	170	27	50	45	290			28538.17
11-DEC-95	7.57	619.9	738	46.5	53	21	31	13.5	172.2	18		27419.3